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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/031,184	01/16/2002	Edward E Beeles	HISHE-56781	2542

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EXAMINER

SAETHER, FLEMMING

ART UNIT	PAPER NUMBER
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3677

DATE MAILED: 04/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/031,184

Applicant(s)

BEELES ET AL.

Examiner

Flemming Saether

Art Unit

3677

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,3-14,16-25 and 27-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-14,16-25 and 27-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ✓ 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***Claim Rejections - 35 USC § 103***

Claims 1, 3-4, 7-10, 13, 14, 16, 17, 20-23, 27, 28 and 31-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Briles (US 3,550,498) in view of Trembley (US 3,742,808). Initially, it should be noted that although Briles shows a nut, it is disclosed "the invention may be embodied in a swage-collar type of nut in the same manner as in the threaded type of nut" (column 9, line 44-45). In that regard, Briles discloses a swage fastener system in combination with a composite assembly of workpieces (62) comprising a pin (54) and a collar (12, 14). The pin includes a threaded (60) and non-threaded portion (56, 58). The collar includes an outwardly flared end portion (20) and a main central bore (at 24) with a shoulder having a larger diameter receiving a sealing insert (16). The sealing insert is deformable so that upon installation it interfaces with the unthreaded and threaded portion of the pin and a workpiece to form a seal (see Fig. 4). The nut is made of a metal and since it is disclosed a "swage" collar, by definition it would be deformable. Briles disclose the sealing insert to be made of tetrafluoroethylene (TEFLON, column 7 line 69). In Briles, the "collar" is read to be inclusive of the member (14) and as such the sealing insert is "tightly sealed" entirely within the collar in the installed condition (see Fig. 4) in engagement with the fastener and a base portion (32) contacts the workpiece. The collar is read as being "unitary" because once installed, the member (14) would form a unitary structure. Alternatively, the member (14) is disclosed, as not being required thus the collar being "unitary" in that it would be formed as a single piece. The "unitary" collar has a base with flat even surface (at 32) to contact a workpiece and in the

alternatively, without the collar, a flat even surface is disclosed as the surface between any two of the channels 52. By virtue of the channels (52), Briles fails to disclose a continuous annular well. Trembley discloses an assembly similar to Briles but in Trembley, the internal shoulder (30) is disclosed as having a surface defining a continuous annular well (see Figs. 1 and 2). At the time the invention was made, it would have been obvious for one of ordinary skill in the art to make the internal shoulder of Briles defining a continuous annular well as disclosed in Trembley because the lack of the channels would make for a simplified structure which be easier to manufacture.

Alternatively, claims 1, 3-4, 7-10, 13, 14, 16, 17, 20-23, 27, 28 and 31-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trembley (US 3,742,808) in view of Briles (US 3,550,498). In applying Trembley as the primary reference, Trembley discloses a fastener system in combination with a composite assembly of workpieces (38, 40) comprising a pin (36) and a collar (10). The pin includes threaded and non-threaded portions. The collar includes an outwardly flared end portion (18) and a main central bore (at 26) with a shoulder having a larger diameter receiving a sealing insert (100, Fig. 2). The sealing insert is deformable so that upon installation it interfaces with the unthreaded and threaded portion of the pin and a workpiece to form a seal (see Fig. 2). The nut is made of a metal and the sealing insert is made of TEFLON (column 4 line 45). In Trembley, the "collar" is read to be inclusive of the member (14) and as such the sealing insert is "tightly sealed" entirely within the collar in the installed condition (see Fig. 2) in engagement with the fastener and a base portion

(at 47) contacts the workpiece. The collar is read as being "unitary" because once installed, the member (14) would form a unitary structure. The "unitary" collar has a base with flat even surface (at 47) to contact a workpiece. Trembley further discloses the internal shoulder (30) as having a surface defining a continuous annular well (see Figs. 1 and 2). Trembley discloses the fastener to be a threaded-type but, does not disclose the fastener to be a swage-type. Briles teaches that a swage collar type nut is a well known equivalent to a threaded type nut. Therefore, it would have been obvious for one of ordinary skill in the art to change the threaded-type fastener of Trembley to a swage-type fastener in view of the teaching in Briles. The swage-type fastener would be advantageous in that it allows for quicker assembly.

Claims 27, 28, 31, 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over modified Briles or modified Trembley in view of Armour (US 3,066,568). As described above, Briles discloses a swage collar and associated pin but, is not specific on the swaging process. Even though swaging processes are well known as discussed in the "Background of the Invention", Armour is used to show the process therein a collar (20) having an internal diameter larger than a pin is positioned on the pin then plastically deformed inwardly to engage the shaft of the pin (Fig 2) by swaging tool (24). At the time the invention was made, it would have been obvious for one of ordinary skill in the art to swage the collar onto the pin in Briles by a process as disclosed in Armour for its recognized efficiency.

Claims 5, 6, 18, 19, 39 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over modified Briles or modified Trembley as applied to claims 1, 4, 13, 17, 27 and 28 above, and further in view of Rath (US 4,768,910). Briles, alone or in view of Armour, does not disclose the collar made of aluminum or titanium. Rath disclose a swage collar and teaches it could be made of aluminum or titanium (column 2, line 61-64). At the time the invention was made, it would have been obvious for one of ordinary skill in the art to make the collar of Briles out of aluminum or titanium as disclosed in Rath in order to make the collar lighter and stronger restively. Lighter and stronger collars would be desirable in applications such as aerospace.

Claims 11, 12, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over modified Briles or modified Trembley as applied to claims 1, 2, 13 and 15 above, and further in view of Breed (US 3,399,589). Briles does not disclose the sealing insert secured to the Collar by complementary rounded flange and groove. Breed discloses a sealing insert secured to nut member by a complementary rounded groove and flange (72). At the time the invention was made, it would have been obvious for one of ordinary skill in the art to provide the seal insert and collar of Briles with a complementary rounded groove and flange as disclosed in Breed in order to provide better securement of the seal insert within the collar. The better securement would help prevent the seal insert from coming loose and possibly detached.

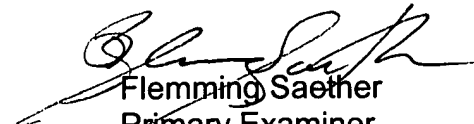
***Response to Remarks***

Applicants remarks have been considered and the examiner agrees the "continuous annular well" when meaning "uninterrupted, having no gaps, holes, or breaks" (pg. 9 of response) defines over the reference to Briles. However, the reference to Trembley was found in a further search which shows the continuous annular well as applied above. Furthermore, there are other references such as those to Velthoven, Berecz and Breed which also show a continuous annular well.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Flemming Saether whose telephone number is 571-272-7071. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Swann can be reached on 571-272-7075. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

  
Flemming Saether  
Primary Examiner  
Art Unit 3677